Air Quality Permitting
Statement of Basis

March 17, 2005

Tier II Operating Permit
No. T2-040323

Nu-West Industries, Inc., dba Agrium, Conda Phosphate Operations, Dry Valley Mine
Soda Springs

Facility ID No. 029-00027

Prepared by:

Ken Hanna, Permit Writer
AIR QUALITY DIVISION

DRAFT FOR PUBLIC COMMENT

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Acronyms, Units, and Chemical Nomenclature

acfm	actual cubic feet per minute
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
Btu	British thermal unit
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	Environmental Protection Agency
gr	grain (1 lb = 7,000 grains)
HAPs	hazardous air pollutants
hp	horsepower
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb/hr	pound per hour
MMBtu	million British thermal units
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM_{10}	particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
PTE	potential to emit
Rules	*Rules for the Control of Air Pollution in Idaho*
SIC	Standard Industrial Classification
SO_2	sulfur dioxide
T/yr	tons per year
$\mu g/m^3$	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Section 404.04, *Rules for the Control of Air Pollution in Idaho* (*Rules*) for Tier II operating permits.

2. FACILITY DESCRIPTION

The Dry Valley Mine, owned and operated by permittee Nu-West Industries, Inc., dba Agrium Conda Phosphate Operations (Agrium), consists of two existing or proposed open pits C & D, which are or will be mined using excavators, 150-ton dump trucks and other support equipment. The Dry Valley Mine operations addressed by this permit also include the backfilling and reclamation work to be performed by Agrium in the Pit B area, as well as the office and maintenance building and related adjacent support facilities. The overburden will either be placed in the mined-out pits or in external overburden dumps. The mined phosphate ore will be hauled to a stockpile area next to the railcar loading area which is generally called a tipple. Next, the phosphate ore is moved from the stockpile area to the conveyor system with front-end loaders and bulldozers. If needed, the rotary impact crusher and associated material handling equipment may be used to reduce the size of the ore. The ore will then pass over a 4-inch screen before being loaded into railcars. A boiler is used to provide space heating for the offices and shop. Specific information is provided below in Section 5.

3. FACILITY / AREA CLASSIFICATION

The Dry Valley Mine is not a major facility as defined in IDAPA 58.01.01.008.10. This mine is not a designated facility as defined in IDAPA 58.01.01.006.27 and it is not a phosphate rock processing plant. The Dry Valley Mine is classified as a minor source because the actual and potential emissions of regulated air pollutants are less than 100 T/yr.

The facility is located within AQCR 61 and UTM zone 12. The facility is located in Caribou County which is designated as attainment or unclassifiable for all criteria pollutants (CO, NO_x, SO_2, lead, and ozone).

The AIRS information provided in Appendix C defines the classification for each regulated air pollutant at the Dry Valley Mine. The AIRS facility classification was changed to B. This required information is entered into the EPA AIRS database.

4. APPLICATION SCOPE

This permit action is for the issuance of a new Tier II permit, due to the a transfer of ownership of the noted portions of the Dry Valley Mine from Astaris Productions, LLC (Astaris) to Agrium. This permit was originally issued to Astaris on June 13, 2002. On May 24, 2004, DEQ received a letter from Agrium and Astaris which indicates that Astaris has transferred ownership of the Dry Valley Mine to Agrium. The companies jointly requested DEQ to recognize the change in ownership and to amend the Tier II operating permit to recognize Agrium as the permittee.

4.1 Application Chronology

May 24, 2004	DEQ received notification of the ownership change
June 10, 2004	DEQ initially declared the application was complete
August 11, 2004	DEQ requested supplemental application information from Agrium
December 1, 2004	DEQ received Tier II permit application information
December 30, 2004	DEQ declared the application was complete

February 14, 2005 DEQ issued a draft permit to Agrium for review

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this Tier II permit.

5.1 Equipment List

Boiler

Manufacturer:	Burnham, Model No. 4FW-277-50-GO-PF, Serial No. 21281
Rated Heat Input Capacity:	1.855 MMBtu/hr
Fuel Types:	Distillate oil, used oil, or liquefied petroleum gas (LPG)
Fuel Input Rates:	16.6 gal/hr used oil; 25.3 gal/hr LPG
Stack Parameters	Height - 18 meters
	Diameter - 0.3048 meter
	Flowrate - 914 acfm

Small generators with 10-52 horsepower are moved about for lighting purposes, and these units are exempt under the PTC requirements per IDAPA 58.01.01.222.

5.2 Emissions Inventory

Allowable emissions from the Dry Valley Mine will not change as a result of issuance of this permit to Agrium, the new owner. This is because the permit is being issued for a change of ownership, and no other physical or operational changes will occur as a result of this action. As noted in the March 21, 2002 Tier II Technical Memorandum for this facility, the emissions estimates for the facility have not changed since the April 23, 1997 PTC revision. As part of the application for re-issuance of this permit to Agrium, some additional emission estimate details were provided (e.g., fugitive emission sources). These estimates were reviewed to confirm they are consistent with DEQ methods and procedures and changes were made where necessary. Copies of this information are included in Appendix A. A copy of the crusher emission estimate worksheet is also included in Appendix A and this information represents no changes from what was included with the April 23, 1998 PTC Technical Analysis. In summary, the estimated fugitive dust emissions from the crusher and its associated equipment are 9.5 lb/hr and 11.7 tons/yr. The crusher fugitive dust estimate is based on the permit requirement which limits the total phosphate ore throughput from the haul-truck loadout at the storage pile to the railcar loading to 3,000,000 tons per consecutive 12-month period. For the Burnham Boiler, a summary of the emissions estimates are given below in Table 5.1 and details are included in Appendix A.

Table 5.1 SUMMARY OF BURNHAM BOILER EMISSIONS INVENTORY

Potential Emissions – Hourly (lb/hr), and Annual (T/yr)										
Source Description	PM_{10}		CO		NO_x		SO_2		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Burnham Boiler, LPG [a]	0.68	0.5	0.09	0.37	0.41	1.79	1.57	6.90	0.02	0.06

[a] For each pollutant, the highest estimated emission rate for either LPG, distillate oil, or used oil was used.

Emissions of toxic air pollutants (TAP) have been estimated for the Burnham Boiler, since it was constructed and/or modified after June 30, 1995, to demonstrate compliance with the PTC requirements of IDAPA 58.01.01.210. TAP emissions from the Burnham Boiler are from the combustion of distillate oil, used oil, and LPG in the 1.85 MMBtu/hr burner. An inventory of the TAPs which were found to exceed the screening emission level (EL) for the boiler are summarized in Table 5.2 and details are provided in Appendix A.

Table 5.2 SUMMARY OF BURNHAM BOILER TAP EMISSION INVENTORY

TAP	Emission Rate (lb/hr)	EL (lb/hr)
Arsenic [a]	9.67E-05	1.5E-06
Cadmium [b]	1.54E-04	3.7E-06
Formaldehyde [c]	5.61E-04	5.1E-04

[a] Maximum emission rate is based on the 0.7 ppm permit limit for arsenic in used oil.
[b] Maximum emission rate is based on used oil combustion.
[c] Maximum emission rate is based on distillate oil combustion.

5.3 Modeling

Since the physical and operational design of the facility are not changed as a result of this permit re-issuance to the new owner, modeling is not required. For convenience, a copy of the SCREEN model conducted for the Burnham Boiler as part of the April 23, 1998 PTC Technical Analysis is included in Appendix B. A copy of the NAAQS modeling results for the Burnham Boiler is also included in Appendix B.

5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this Tier II permit.

IDAPA 58.01.01.401.....Tier II Operating Permit

This Tier II operating permit is being issued as a result of the change in ownership of the facility.

IDAPA 58.01.01.203, 651.....Permit Requirements - NAAQS, Fugitive Dust

According to IDAPA 58.01.01.403.02, no Tier II operating permit shall be granted unless the applicant shows to the satisfaction of the Department that it would not cause or significantly contribute to a violation of any ambient air quality standard. As indicated above, this permit is being issued for a change in the ownership of the facility. The physical and operational design of the facility are not changed as a result of issuance of this permit, therefore, a NAAQS analysis is not required. However, in the interest of clarifying the NAAQS compliance requirements, the following information is provided.

The requirement for modeling for the demonstration of compliance is determined on a case by case basis. Based on the information presented, DEQ has determined, for this situation, that modeling is not necessary to determine compliance with the NAAQS. DEQ made this decision based on the following information: (1) current PM10 background concentration in the area is low, (2) emission factors for fugitive dust from this source category are somewhat uncertain, (3) model predictions for this type of source are highly uncertain, and require the application of deposition in the model which adds additional uncertainty to the final results. Because of these great uncertainties for this case, DEQ determined it would be more appropriate to require specific fugitive dust control measures in the permit than to perform a modeling analysis. In particular, the permittee is required to develop, implement and maintain a site specific Fugitive Dust Control Plan which contains operating, monitoring and recordkeeping elements. DEQ has determined that these control measures demonstrate, to the satisfaction of DEQ, that this facility would not cause or significantly contribute to a violation of any ambient air quality standard.

For convenience, a copy of the SCREEN model prepared for the Burnham Boiler, and which was attached to the April 23, 1998 PTC Technical Analysis, is included in Appendix B. Also, a copy of the NAAQS modeling results for the Burnham Boiler is included in Appendix B.

IDAPA 58.01.01.203 & 210 .....Demonstration of Preconstruction Compliance with Toxic Standards

It has been demonstrated that emissions from the used oil-fired Burnham boiler will comply with IDAPA 58.01.01.210 so long as the used oil requirements specified in the Tier II permit are met. The used oil limits were re-evaluated and changed. In particular, the maximum allowable concentration of arsenic was found to be 2.8 ppm instead of 0.7 ppm and limits for cadmium and chromium which are more stringent than those specified by 40 CFR 279.12 were found to be unnecessary. Compliance is demonstrated as long as the arsenic concentration in used oil does not be exceed 2.8 ppm, the total quantity of used oil combusted does not exceed 22,000 gallons per year and the permittee performs the associated monitoring for these parameters as specified in the permit. The SCREEN modeling conducted for the Burnham Boiler remains effective and unchanged, and a copy is included in Appendix B for convenience. Included in Appendix A are details of the results which demonstrate compliance with IDAPA 58.01.01.210 for the Burnham Boiler.

40 CFR 60, Subpart NN .....New Source Performance Standards (NSPS) for Phosphate Rock Plants

40 CFR Part 60, Subpart NN does not apply to the Dry Valley Mine. Although the Dry Valley Mine meets the definition of a Phosphate Rock Plant, Subpart NN does not apply since the mine does not utilize any of the affected facilities listed in 60.400(a)(2). Details are provided as follows:

As given by 60.400(a)(2), the provisions of this subpart apply to the following affected facilities used in phosphate rock plants which have a maximum plant production capacity greater than 4 tons/hr: dryers, calciners, grinders, and ground rock handling and storage facilities, except those facilities producing or preparing phosphate rock solely for consumption in elemental phosphorus production. Note that the Dry Valley Mine does not utilize any of the affected facilities listed above.

As defined by 60.401(a), a Phosphate Rock Plant is any plant which produces or prepares phosphate rock product by any or all of the following processes: mining, beneficiation, crushing, screening, cleaning, drying, calcining, and grinding. The Dry Valley Mine meets the definition of a Phosphate Rock Plant since it produces/prepares phosphate rock by mining, crushing and screening.

40 CFR 60, Subpart OOO .....NSPS for Nonmetallic Mineral Processing Plants

The provisions of this subpart continue to apply to the crusher at the Dry Valley Mine, and the requirements for complying with these regulations remain in the Tier II permit with no changes.

5.5 Fee Review

A Tier II operating permit processing fee is not required for a change in the name of ownership of the holder of a Tier II operating permit in accordance with IDAPA 58.01.01.407.02.c.

5.6 Regional Review of Draft Permit

A copy of the draft Tier II permit and Statement of Basis were provided to the Pocatello Regional Office on January 14, 2005. Comments were received on January 18, 2005 and they have been incorporated into this draft as noted under Permit Conditions 4.3 and 4.4.

5.7 Facility Review of Draft Permit

A copy of the draft PTC and Statement of basis were issued to the facility for review on February 14, 2004. Comments were received from Agrium on March 4, 2005, including corrections to the facility name, plant location, facility description and application scope.

6. PERMIT CONDITIONS

Changes between the Tier II permit issued for the Dry Valley Mine on June 13, 2002 and the Tier II permit proposed for issuance to Agrium, for the change in ownership, are described below. All permit conditions given below refer to the proposed permit for Agrium unless noted otherwise.

Permit Condition 1.2 of the June 13, 2002 Permit

Permit condition 1.2 listed the facility's preceding permits incorporated into the June 13, 2002 permit. This information is not relevant to the facility's new owner, Agrium, therefore, it was not included.

Permit Condition 1.2, Table 1.1, and Permit Condition 3.1

To make it more clear what fuels the Burnham Boiler may combust, distillate oil was added to the description of fuels which may be used.

Permit Conditions 2.1, 2.2, and 2.3

The requirements for complying with the fugitive dust rules under IDAPA 58.01.01.651 are addressed in more detail in the proposed permit. In particular, requirements for a site-specific Fugitive Dust Control Plan are specified. It is noted that a Plan to meet those requirements and govern site operations has been provided to DEQ as part of the permit application.

The demonstration of compliance with the fugitive dust rules is enhanced in the proposed permit by conducting monthly facility-wide inspections of potential sources of fugitive dust emissions, during daylight hours and under normal operating conditions to ensure that the methods used to reasonably control fugitive dust emissions are effective. In addition, requirements are included for taking corrective actions when necessary and recording the results of the inspections.

Permit Condition 3.4.2

The concentration limit for arsenic was changed from 0.7 to 2.8 ppm and the limits for cadmium and chromium were removed. The compliance demonstration method is still sufficient and was not changed.

Permit Conditions 3.5, 3.6, and 4.6

The requirement to maintain records for five years was changed to be two years. The two-year record retention period is more consistent with Tier II operating permit practices.

Permit Conditions 4.3 and 4.4

The method for demonstrating compliance with the NSPS opacity requirements was changed. Instead of referring to IDAPA 58.01.01.625 or the DEQ procedures manual, opacity shall be determined using the procedures specified in 40 CFR 60.675.

Tier II General Provisions

The most recent version of the Tier II General Provisions was used in this permit.

7. PUBLIC COMMENT

A public comment period on the proposed Tier II operating permit and application materials will be provided, in accordance with IDAPA 58.01.01.404.01.c.

8. RECOMMENDATION

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ issue a draft Tier II operating permit for Public Comment for the Dry Valley Mine in accordance with IDAPA 58.01.01.404.01.c. PSD requirements do not apply.

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APPENDIX A - Emissions Inventory

APPENDIX B - Modeling Review

APPENDIX C - AIRS INFORMATION

AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM

Facility Name: Agrium, Dry Valley Mine
Facility Location: Soda Springs
AIRS Number: 029-00027

AIR PROGRAM / POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO_2	B							U
NO_x	B							U
CO	B							U
PM_{10}	B							U
PT (Particulate)	B		B					U
VOC	B							U
THAP (Total HAPs)	B							U
			APPLICABLE SUBPART					
			OOO					

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

[b] AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, **or** each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).